

1960 EDITION

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Tr

# Steel TRUSCON Doors

INDUSTRIAL TYPES



REPUBLIC STEEL CORPORATION, TRUSCON DIVISION, Youngstown 1, Ohio



# TRUSCON INDUSTRIAL STEEL DOORS—SERIES 31

Truscon Series 31 steel doors and hardware are designed and constructed for economical production and to withstand hard usage. They are well adapted for the constant service required of doors in factories, warehouses, depots, garages, service stations, etc.

The stiles and rails are made from 16 gauge steel tube 5" x 1 3/4". Corners are welded and ground smooth.

The six leaves shown below can be furnished as single or double doors to swing or slide. Glass is held in place by continuous glazing angles. Note that warehouse types are indicated by a star-★.

Doors are prepared for specially designed, extra heavy Truscon hardware, see pages 4 and 5. Door closers, Panic Exit devices, push-pull handles, louvers and ball bearing hinges can also be furnished when specified. Hardware is shipped unattached.

The heavy pressed steel door frames for swing doors are reinforced at hinge points. They are shipped knocked-down.

Door leaves up to a maximum size of 7' x 12' to be bonderized and primed with one coat of light gray oven baked enamel. All others to be given one coat of standard gray metallic primer air dried.



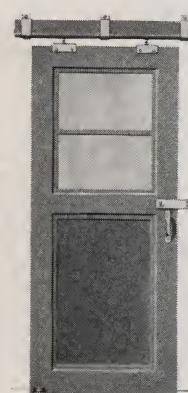
Double Swing



Single Swing

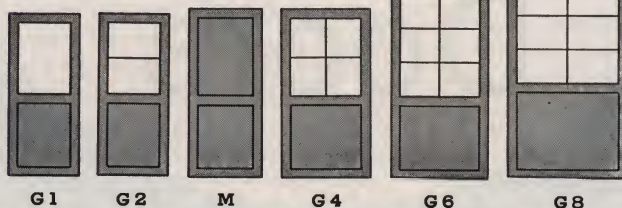


Double Slide



Single Slide

## COMMODITY STOCK AND STANDARD LEAF TYPES



SINGLE SWING				DOUBLE SWING				SINGLE SLIDE				DOUBLE SLIDE			
2868	G 1	★G 2	★M	5468	G 1	★G 2	★M	.....	....	....	....	.....	....	....	....
2870	G 1	★G 2	★M	.....	....	....	....	.....	....	....	....	.....	....	....	....
3070	G 1	★G 2	★M	6070	G 1	★G 2	★M	3070	G 1	G 2	M	6070	G 1	G 2	M
3470	G 1	★G 2	★M	.....	....	....	....	.....	....	....	....	.....	....	....	....
3870	G 1	★G 4	★M	7470	G 1	★G 4	★M	.....	....	....	....	.....	....	....	....
4080	....	★G 6	★M	8080	....	★G 6	★M	4080	....	G 6	....	8080	....	G 6	....
50-100	....	★G 8	....	100-100	....	★G 8	....	50-100	....	G 8	....	100-100	....	G 8	....

★ Denotes stock type swing doors — prepared for both mortise locks and lever latch hardware. Types 3070, 3870, and 6070 also available from warehouse with provision for Panic Exit hardware sets marked with ★ on page 5. All other swing doors and all slide doors are standard units, available from factory only. Frames for stock doors are also available from warehouse, prepared to receive locksets P-3500, P-3638, and lever latch P-6564, and, except for types 50-100 and 100-100, for stock Panic Exit hardware marked with ★ on page 5. Frames requiring preparation for all other locksets are available from factory only.

## OPENING DIMENSIONS AND GLASS SIZES

DOOR NUMBER	DOOR SIZE		SWING DOOR OPENING DIM.		SWING DOOR *MASONRY OPG. DIM.		SLIDE DOOR OPENING DIM.		GLASS SIZES
	Width	Height	Width	Height	Width	Height	Width	Height	
<b>Single Doors</b>									
2868	2'-7 3/4"	6'-7 1/2"	2'-8"	6'-8"	3'-0 1/2"	6'-10 1/4"	....	....	21 3/4" x 16"
2870	2'-7 3/4"	6'-11 1/2"	2'-8"	7'-0"	3'-0 1/2"	7'-2 1/4"	....	....	21 3/4" x 18"
3070	2'-11 3/8"	6'-11 1/2"	3'-0"	7'-0"	3'-4 1/2"	7'-2 1/4"	2'-8"	6'-10"	25 3/4" x 18"
3470	3'-3 3/8"	6'-11 1/2"	3'-4"	7'-0"	3'-8 1/2"	7'-2 1/4"	....	....	29 3/4" x 18"
3870	3'-7 3/8"	6'-11 1/2"	3'-8"	7'-0"	4'-0 1/2"	7'-2 1/4"	....	....	16 3/4" x 18"
4080	3'-11 3/8"	7'-11 1/2"	4'-0"	8'-0"	4'-4 1/2"	8'-2 1/4"	3'-8"	7'-10"	18 3/4" x 15 1/2"
50-100	4'-11 3/8"	9'-11 1/2"	5'-0"	10'-0"	5'-4 1/2"	10'-2 1/4"	4'-8"	9'-10"	24 3/4" x 15 1/2"
<b>Double Doors</b>									
5468	5'-3 3/4"	6'-7 1/2"	5'-4"	6'-8"	5'-8 1/2"	6'-10 1/4"	5'-8"	6'-10"	21 3/4" x 16"
6070	5'-11 3/8"	6'-11 1/2"	6'-0"	7'-0"	6'-4 1/2"	7'-2 1/4"	5'-8"	6'-10"	25 3/4" x 18"
7470	7'-3 3/8"	6'-11 1/2"	7'-4"	7'-0"	7'-8 1/2"	7'-2 1/4"	7'-8"	7'-10"	16 3/4" x 18"
8080	7'-11 3/8"	7'-11 1/2"	8'-0"	8'-0"	8'-4 1/2"	8'-2 1/4"	7'-8"	7'-10"	18 3/4" x 15 1/2"
100-100	9'-11 3/8"	9'-11 1/2"	10'-0"	10'-0"	10'-4 1/2"	10'-2 1/4"	9'-8"	9'-10"	24 3/4" x 15 1/2"

\* Masonry opening dimensions listed for swing doors are based upon the use of Truscon Standard pressed steel door frames.

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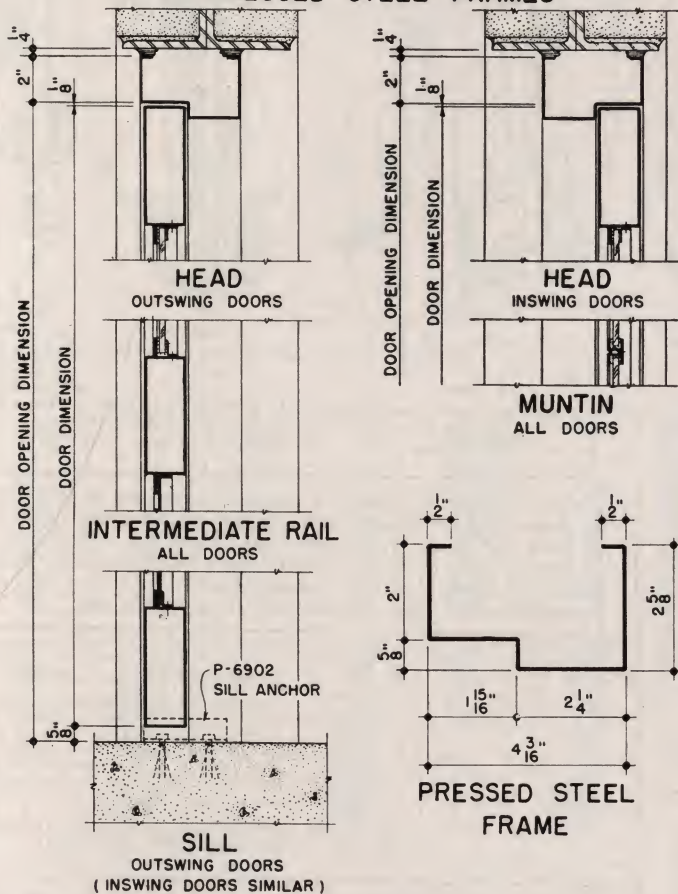


# TRUSCON INDUSTRIAL STEEL DOORS—SERIES 31 STANDARD DETAILS AND SPECIFICATIONS

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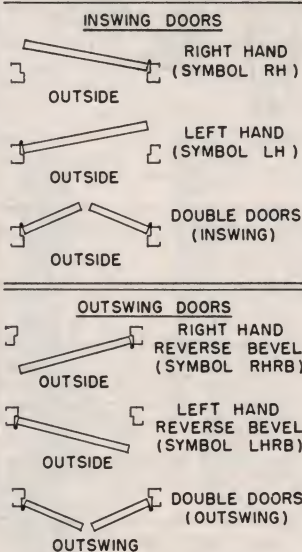
## SWING DOORS

### WITH PRESSED STEEL FRAMES



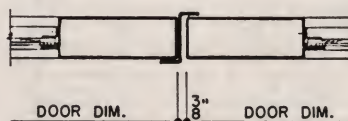
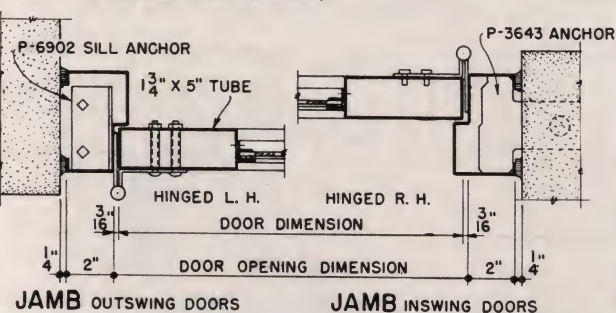
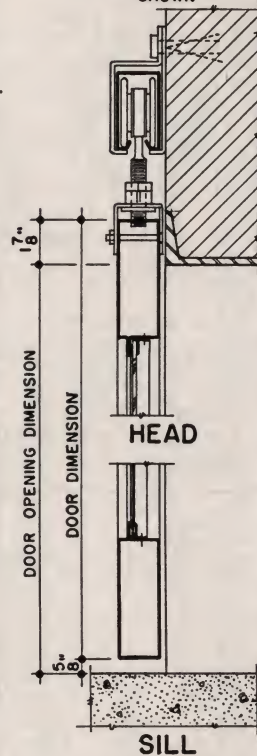
- HAND AND SWING OF DOORS IS DETERMINED AS VIEWED FROM THE OUTSIDE. REFER TO DIAGRAM BELOW.
- RIGHT HAND LEAF OF A DOUBLE DOOR IS THE ACTIVE LEAF.
- INDICATE WHETHER SLIDE DOORS SLIDE ON INSIDE OR OUTSIDE OF BUILDING AND TO RIGHT OR LEFT AS VIEWED FROM THE OUTSIDE.
- DOUBLE SLIDE DOORS SLIDE APART.

### HAND AND SWING OF DOORS

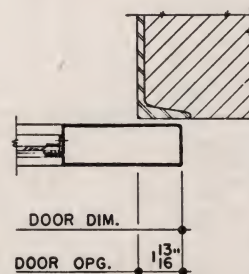


## SLIDE DOORS

### OUTSIDE INSTALLATION SHOWN



ASTRAGAL  
DOUBLE DOORS



JAMB SLIDE DOORS

## SPECIFICATIONS

**1. Material and Construction**—Stiles and rails shall be constructed of 5" x 1 3/4" 16 gauge pressed steel tube with lock seam. Corners shall be of welded construction with all joints face welded and ground smooth. Glass panel muntins, shall be securely and neatly welded to rails and stiles and at cross joints. (Upper portion of the door will be fitted with solid steel panel when specified.) The lower portion of the door shall be equipped with steel panels, not less than 16 gauge in thickness, bedded in mastic and secured to the stiles and rails with continuous steel angles and screws.

**2. Pressed Steel Door Frames**—(a). All Series 31 swing doors, where so indicated or specified, shall be provided with Truscon standard pressed steel door frames made of 14 gauge steel.

(b). Frames shall be prepared to receive standard hardware, provided with anchors for building into masonry.

**3. Hardware**—(a). Each swinging leaf shall be provided with three heavy steel half surface template butt hinges.

(b). All swing doors shall be equipped with Truscon mortise cylinder lock or Truscon lever latch with padlock brackets. Cylinder lock to be equipped with latch bolt operated by knobs, and dead bolt operated by thumb turn from inside and by key from outside. (Other locksets, as described on hardware page, will be furnished when so specified.) (c). On double swing doors one leaf shall be equipped with foot bolt and spring top bolt. (d). Sliding leaves shall be hung from four wheel roller-bearing trolleys and shall be provided with guides, handles, stops, and hasp and staples. (e). All double doors shall be provided with astragals.

**4. Shop Finish**—Door leaves up to a maximum size of 7' x 12' shall be bonderized and primed with one coat of light gray baked on enamel. All others shall be given one coat of standard gray metallic primer air dried.

NOTE: We reserve the right to amend specifications and details, without notice, in the interest of product improvement.

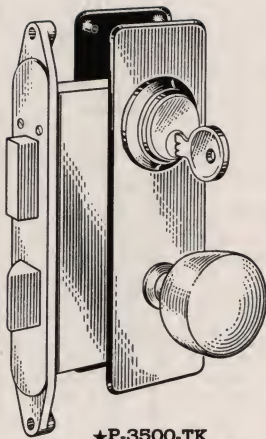


# TRUSCON INDUSTRIAL STEEL DOORS — SERIES 31

## STANDARD HARDWARE

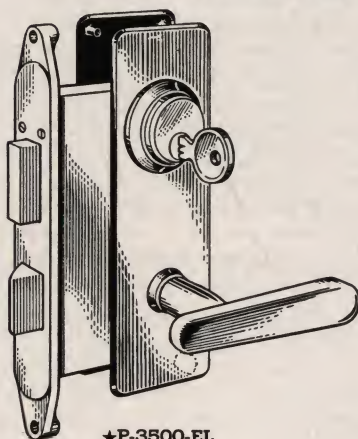
★ Indicates Warehouse Items

† Indicates Factory Stock Items



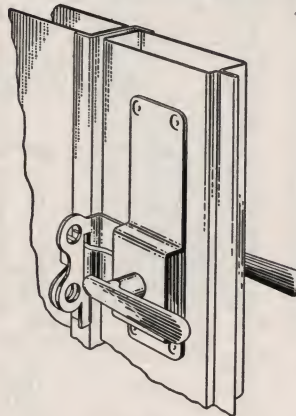
★P-3500-TK

Mortise Locks with cylinder, for swing doors  
Bronze Knobs and Escutcheons,  
U. S. 10 finish



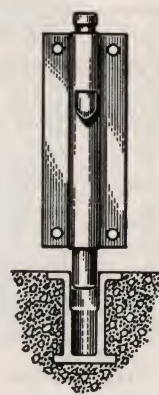
★P-3500-EL

Iron Lever Handles and  
Escutcheons black finish



★P-6564

Iron Lever Latch Hardware for swing doors  
(Padlock brackets can be applied  
on hinge side only)



★P-2993  
8" Foot Bolt  
for double  
swing doors

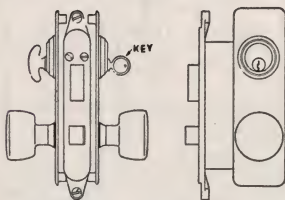


★P-2994  
8" Chain Bolt  
for double  
swing doors

U. S. Gov't Specification FFH-111a  
Foot bolt F-1023B — 8"  
Chain bolt F-1023A — 8"

All locksets with suffix "TK" have bronze knobs and escutcheons, U.S. 10 finish.

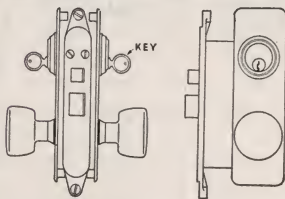
Series 31 Swing Doors are prepared to receive all locksets shown (Set P-6816 requires drilling one additional hole in field,  $\frac{1}{8}$ " Dia.). Warehouse stock frames are prepared to receive only P-3500, P-3638, and P-6816 locksets, and P-6564 lever latch hardware. Frames requiring other lockset preparation are available from factory only.



★ Set P-3500-TK; Gov't No. 86B

Latch bolt by knob from either side. Dead bolt by key from outside and thumb turn from inside. Reversible. Also available with cylinders both sides (Gov't No. 86C).

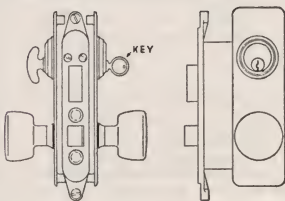
★ (Set P-3500-EL — Iron lever handles and escutcheons, black finish.)



Set P-3606-TK; Gov't No. 86G

Latch bolt by knob from either side except when outer knob locked by stop works controlled by inside cylinder. When outer knob locked, latch bolt by key outside. When door closes, auxiliary bolt deadlocks latch bolt. When specified, inside cylinder by master key only. Not reversible.

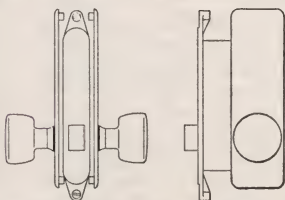
(Set P-3606-EL — Iron lever handles and escutcheons, black finish.)



Set P-3638-TK; Gov't No. 86A

Latch bolt by knob from either side, except when outer knob is locked by stop in face. When outer knob is locked, latch bolt by key from outside. Dead bolt by key from outside and thumb turn from inside. Not reversible.

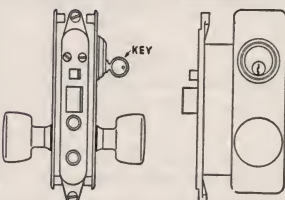
(Set P-3638-EL — Iron lever handles and escutcheons, black finish.)



† Set P-6542-TK; Gov't No. 86N

Latch bolt by knob from either side. Reversible.

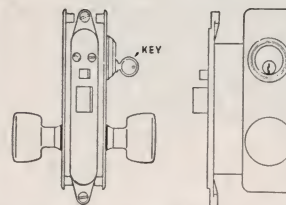
(Set P-6542-EL — Iron lever handles and escutcheons, black finish.)



† Set P-6593-TK; Gov't No. 86E

Latch bolt by knob from either side, and from inside at all times. Outer knob is locked by stop in face. When outer knob locked, latch bolt by key from outside. When door is closed, auxiliary bolt deadlocks latch bolt against end pressure. Not reversible.

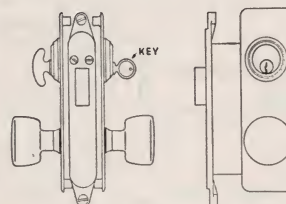
(Set P-6593-EL — Iron lever handles and escutcheons, black finish.)



† Set P-6595-TK; Gov't No. 86J

Latch bolt by key from outside and by knob from inside at all times. Latch bolt by knob from outside, except when locked by key. Cylinder controls stop works. When door is closed, auxiliary bolt shall deadlock the latch bolt against end pressure. Not reversible.

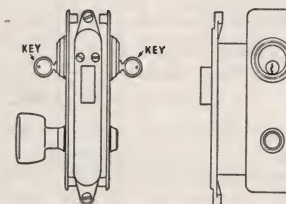
(Set P-6595-EL — Iron lever handles and escutcheons, black finish.)



Set P-6612-TK; Gov't No. 86P

Dead bolt by key from one side and by thumb turn from other side. Fixed knobs on both sides. Recommended for use with door closer.

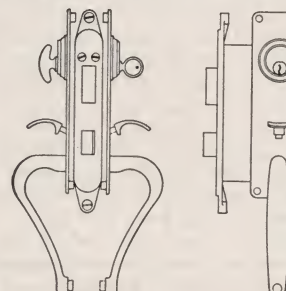
(Set P-6612-EL — Iron lever handles and escutcheons, black finish.)



† Set P-6614-TK; Gov't No. 86T

Dead bolt by key from either side. Fixed knob on hinge side only. Recommended for use with door closer.

(Set P-6614-EL — Iron lever handles and escutcheons, black finish.)



Set P-6816; Gov't No. 123A\*

Latch bolt by thumb piece from either side at all times. Dead bolt by key from outside and by thumb turn inside. (Illustrated.)

\* Gov't No. 123A requires cylinders both sides, and lock will be so furnished when specified.

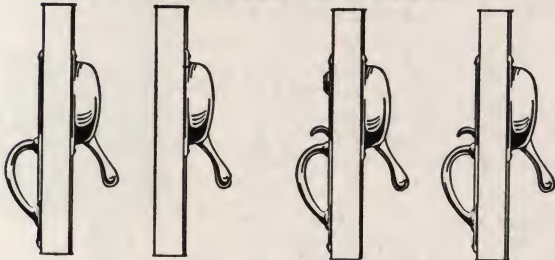


# TRUSCON INDUSTRIAL STEEL DOORS—SERIES 31

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NOTES: (a) All bronze hardware has U. S. 10 finish. (b) †Denotes factory stock items.  
(c) Panic Exit hardware marked with star ★ is available from warehouse for door types 3070, 3870, and 6070. All other hardware marked with star ★ is available from warehouse. Doors and frames requiring hardware NOT marked with star ★ must be shipped from factory.

## BRONZE PANIC EXIT DEVICES FOR DOUBLE SWING DOORS



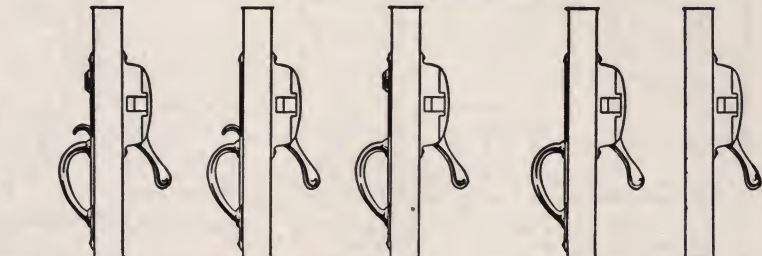
★No. 5400 x 2510 No. 5400

INSIDE CONTROL

★No. 5433 x 2513 With Cylinder No. 5422 x 2512 No Cylinder

INSIDE AND OUTSIDE CONTROL

## BRONZE PANIC EXIT DEVICES FOR SINGLE SWING DOORS

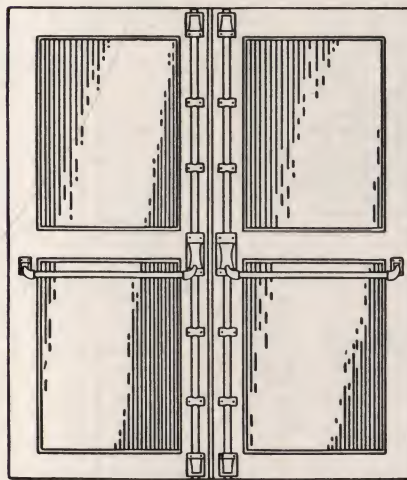


★No. 5333 x 2513 With Cylinder No. 5322 x 2512 No Cylinder No. 5311 x 2511 With Cylinder

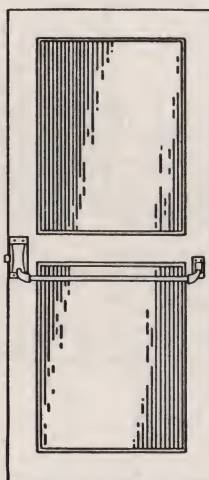
INSIDE AND OUTSIDE CONTROL

No. 5300 x 2510 No. 5300

INSIDE CONTROL

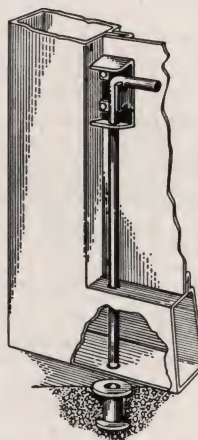


Double Swing Door



Single Swing Door

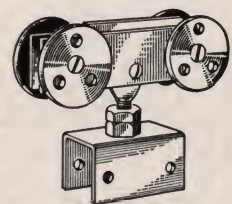
## ELEVATIONS OF DOORS WITH PANIC EXIT HARDWARE



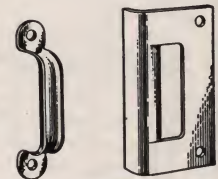
†P-3517  
Cane Bolt for slide doors



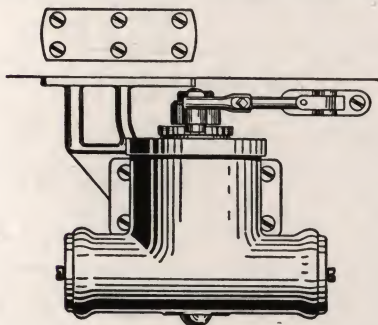
★STANDARD  
LOUVER  
FIXED  
TYPE



†P-3540  
Trolley Assembly  
for slide doors

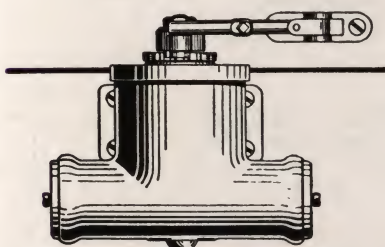


†P-3527  
Handle and Pull  
Assembly for slide doors

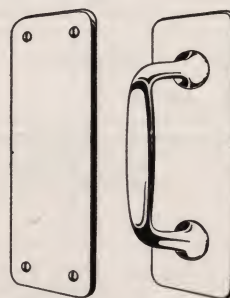


Door Closers P-3534 with soffit  
bracket for Outswing Doors

★ DOOR CLOSERS (Above and Below)  
Iron, with painted finish  
U. S. Gov't No. FFH-121c, Type 3001 and 3002



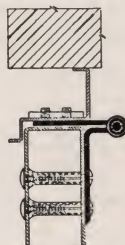
Door Closers P-3535 for Inswing Doors



## PUSH AND PULL HANDLES

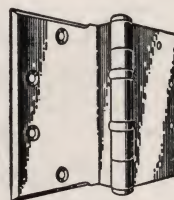
Cast Bronze

★ For Stock Doors, BP-6537, 2½" x 8".  
Front filler plate P-6537-3 included. Fits  
standard lock preparation.  
On special order, P-3706, 3" x 12". Requires  
special preparation of door.

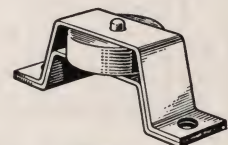


## HALF SURFACE BALL BEARING HINGE

†P-3572, Steel or Bronze  
U. S. Gov't No. FFH-116b, Type 2080½P



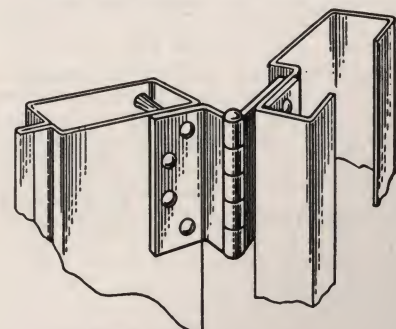
†P-1354  
Hook Back and Ring for  
swing doors



†P-3539  
Roller Guide for slide doors



†P-3521  
Hasp and Staple Assembly for slide doors



★P-2996—Hinge for outswing doors  
★P-3618—Hinge for inswing doors

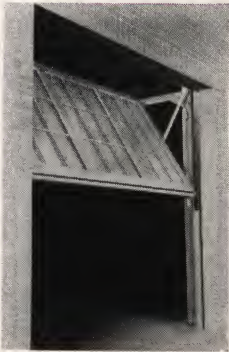


## INSTALLATION DETAILS — SLIDE DOORS





# TRUSCON TWO-SECTION LIGHT TUBE TURNOVER DOORS



Designed for rapid operation, Truscon Two-Section Turnover Doors are effective barriers to infiltration of cold air and resultant heat loss in industrial buildings of all types.

These weathertight steel doors, of unusually heavy construction, have two leaves, counterweighted in any position in the complete "door cycle" from fully closed to fully open. This permits easy manual control at all times.

When the door opens, the bottom leaf slides upward vertically until it lies parallel to and behind the top leaf. Then both leaves move together, **turning over**, so that their outside surfaces are upward when they reach the horizontal position.

An important advantage is the reduced clearance required inside the building for opening and closing these doors. This design affords minimum interior clearance at any point in the door cycle.

## SPECIFICATIONS

**1. Scope of Work** — The work to be included shall consist of furnishing the material necessary to complete all Two-Section Turnover Doors.

**2. General** — (a) All turnover doors shown on the drawings shall be of the tubular design as manufactured by Republic Steel Corporation, Truscon Division, Youngstown, Ohio. (Maximum opening dimensions for tubular design is 14' x 14'.)

(b) Each door shall be composed of a top and bottom leaf of equal dimensions.

(c) The bottom leaf shall be arranged to slide vertically upward until it is directly opposite and behind the top leaf. Both leaves then act together, turning over in such a manner that in their "full open" position, they lie horizontally directly behind the door header.

(d) In its closed position, the top leaf shall be suspended by a link mechanism at each jamb designed to give this leaf a definite connection to the building structure. It shall further be held against the door header by spring acting bolts.

(e) The opening mechanism shall be so designed, that the leaves are perfectly balanced by the counterweights in any operating position.

**3. Material** — (a) All frame members, sheets, sash sections, guides and counterweight enclosures shall be of hot-rolled new billet steel of the gauges and sizes shown on the drawings or hereafter called for in these specifications.

**4. Construction** — (a) The stiles and rails shall be constructed of cold formed  $1\frac{3}{4}$ " x 5" x 16 gauge steel tubing.

(b) All corners and intersections shall be welded and ground smooth on exposed surfaces of the door. Welds must develop the full strength of the section.

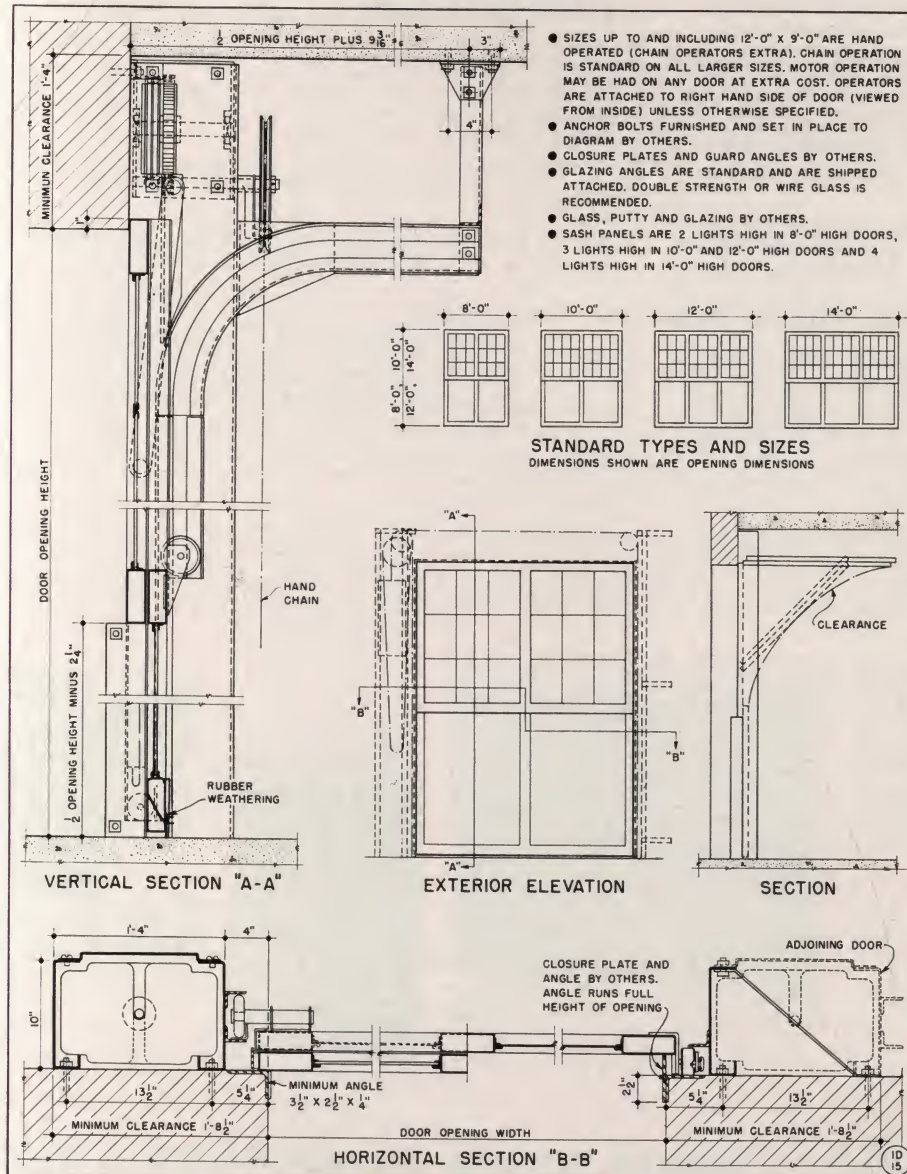
(c) The lower leaf of the door shall be fitted with 14 gauge commercial grade steel sheets. These sheets shall be set in mastic, and shall be held in place by continuous steel retaining angles.

(d) The upper leaf of the door shall be fitted with steel sash furnished with continuous inside metal glazing strips.

(e) The jamb plates which bolt to the inside face of the door opening shall be pressed steel channel shapes 10" deep and not less than  $\frac{1}{8}$ " in thickness. The door leaves, guides, and operating mechanism are all supported from these jamb plates. The end counterweight enclosure shall be the same channel shape as the jamb plates and extend to the same height. The front cover of the counterweight enclosure shall be 16 gauge metal and 7'-0" high. The outside weather plates below the bottom leaf at each jamb are part of the door frame and are to be furnished with it by the structural steel contractor.

(Specifications continued on next page)

## TUBULAR DESIGN





## SPECIFICATIONS (Continued)

**5. Hardware and Operators** — (a) Tubular Rail Doors up to and including 12'-0" in width and 9'-0" in height are to be manually operated by handles and a pull-down chain on the bottom leaf. Tubular Rail Doors over above dimensions are to be mechanically operated by a continuous zinc coated hand chain, located inside the building at either jamb of the opening. The ratio of the travel between hand chain and the door shall not exceed 6 to 1 and the pull on the hand chain must not exceed 25 lbs.

(b) The top corners of the bottom leaf shall be fitted with adjustable 4" diameter rollers mounted on anti-friction bearings. The bottom corners shall be fitted with graphite bronze-bushed steel rollers attached by a rolled steel bracket fastened to the leaf. One 6-strand 37 wire plough-steel cable, or equal, shall be attached to each of these brackets and run continuously over cast iron sheaves mounted on ball bearings to the counterweight. At the counterweight the cables shall return around a double grooved ball-bearing sheave to an upper suspension point, where independent adjustment shall be provided for each cable. The sectional counterweights shall be of cast iron with clean regular surfaces and weighing not more than 50 lbs. per section. They shall pile true on a center rod.

(c) The operator unit above the counterweights shall consist of a welded steel frame which bolts directly to the jamb plate. This frame shall support V-grooved cable sheaves of size not less than recommended by cable manufacturers. The cable sheaves shall be operated through a gear reducing unit to a hand chain wheel. All hand chain operated units shall also be equipped with the necessary provisions for electrification.

(d) Doors shall be locked by a throw bolt on the inside of the bottom leaf.

**6. Electrical Operators** — (a) All turnover doors, when noted on the drawings, shall be fitted with electric power drives of the fully automatic type, controlled from one or more pushbutton stations.

(b) These electric operators shall consist of a factory assembled unit attaching directly to the standard door operator as specified under Paragraph 5, Section (c). The electric motor shall be of the

high starting torque, induction type, vertically mounted, with the right angle reducing gear built integral with the motor frame. The motor shall further be equipped with a multiple disc, built-in brake, acting on the motor shaft to stop and hold the door in any position when the current is off. Motor is also equipped with emergency hand chain operator.

(c) The doors shall be controlled by a 3-button momentary contact pushbutton station (marked "open-close-stop") mounted inside the building and at one jamb of the opening. Additional push-button control stations may be had at extra cost. The doors shall be automatically stopped in their fully open or fully closed positions by means of lever operated snap-type limit switches. Motor reversing control shall consist of a high quality combination reversing starter and throwout switch. The door manufacturer will assemble and wire the complete unit in the shop before shipment to the job. The general wiring contractor shall furnish and bring the main supply wires to a point adjacent to the motor equipment and complete the wiring in accordance with wiring diagram in the control cabinet.

(d) Electric operator is equipped for *either* 220 or 440 volt 3 phase 60 cycle current supply.

**7. Shop Finish** — (a) Before shipment all leaves, guides, and the weight boxes shall be given a coat of gray metallic primer paint. The machinery shall be painted with one coat of gray enamel. No field painting is included under this specification.

**8. Erection** — (a) The erection of the door and operating equipment is to be in strict accordance with instructions furnished by door manufacturer.

(b) The building contractor shall furnish and set the anchor bolts necessary to install the door in accordance with the diagram furnished by the door manufacturer.

**9. Glazing** — (a) The glass, putty, and glazing are to be furnished by the glazing contractor after the door has been completely erected.

NOTE: We reserve the right to amend specifications and details, without notice, in the interest of product improvement.

## OTHER TRUSCON INDUSTRIAL STEEL DOORS

For detailed information, consult nearest Truscon district office.

**Accordion Doors — Series 500LT and 500HT** — Manual or electrical operation. Design: three to six leaves. In fully open position, door leaves clear jambs and permit complete use of clear door opening. Maximum leaf size 4' x 12', permits door openings up to 24' x 12' in 6-leaf design. Can be furnished for openings up to 30' x 22' in 6-leaf design.

**Swing and Slide Doors — Series 100** — For use in larger than normal openings requiring swing or slide doors subject to constant and heavy service. All hardware is extra heavy.

**Single-Section Light Tube Vertical Lift Doors** (Not illustrated) — Manual or electrical operation. Door leaf rises vertically and

completely clears door opening. Perfectly balanced by counterweights in any position. Maximum opening dimensions 14' x 14'.

**Two-Section Light Tube Vertical Lift Doors** — Similar in operation to single section door. Bottom leaf sets behind plane of top leaf and moves simultaneously with it but at twice the speed. Maximum opening dimensions 14' x 14', but requires less head room than single section door.

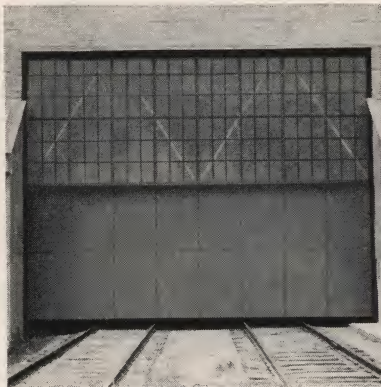
**Industrial Canopy Doors — Series 800LT** — Hand operation only. Maximum size 10' x 10'. Perfectly balanced in any position by counterweights. Only 8 1/4" clearance required at the head. Sturdy and simple operating hardware assures easy operation and long life.



Industrial Slide Door



Industrial Canopy Door



Two-Section Vertical Lift Door



Accordion Steel Door



Industrial Swing Door



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